STETHORUS AND SPIDER MITES ON RED RASPBERRIES

C. H. Shanks and A. L. Antonelli
Washington State University
B. D. Congdon
Seattle Pacific University

When "trap colonies" of twospotted spider mites, *Tetranychus urticae*, are placed on red raspberry leaflets in early spring, usually up to 50% of them will be infested by the coccinellid, *Stethorus punctum picipes,* within a week. This occurs even if examination of raspberry leaves shows virtually no mites or *Stethorus* to be present. Predatory mites seem to be of less importance in the control of mites.

Experiments in 1992 were designed to determine the effects of some insecticides on *Stethorus* and subsequently on spider mite populations. Malathion, which probably is applied to 80% of the red raspberry fields, caused no reduction in *Stethorus* numbers and no increase in spider mites was noted. When permethrin was applied on June 5 to a commercial raspberry field, the percentage of trap colonies attracting *Stethorus* dropped from nearly 20% to zero immediately. The number of spider mites per leaflet in 60-leaflet samples rose from zero to 25 mites per leaflet on July 29 and 235 on August 26. *Stethorus* reappeared 6-7 weeks after the spray and peaked at 2.3 individuals (all stages) per leaflet on September 9. Mite numbers were back to near zero by September 23. No predatory mites were ever seen. The field should have few overwintering mites and a good number of *Stethorus* in spring, 1993.

The study of other fields also showed a relationship between numbers of *Stethorus* in the early season and later spider mite numbers. In fields where the number of trap colonies attracting *Stethorus* dropped from 15-18% in early June to zero 2 weeks later, mite numbers rose to high levels in July and August. The reverse was true when *Stethorus* was still detectable in late June.